We claim:

1   1.   A method of providing device control to at least one device component, said device

2   control enabling interaction of a data network service with said at least one device

3   component, said method comprising:

4   communicating with said at least one device component;

5   logically associating a selection of said at least one device component in an aggregate

6   logical device;

7   maintaining a logical model of said aggregate logical device; and

8   providing access to said data network service by representing said selection of said at

9   least one device component to said data network service as said aggregate logical

10   device.

1   2.   The method of claim 1 wherein said maintaining said logical model comprises

2   maintaining a state of each of said selection of said at least one device component in said

3   logical model.

1   3.   The method of claim 1 wherein said communicating uses a stimulus message format.

1   4.   The method of claim 3 wherein said stimulus message format employs the Megaco

2   Protocol.

1   5.   The method of claim 3 wherein said stimulus message format employs the Session

2   Initiation Protocol (SIP).

1   6.   The method of claim 3 wherein said stimulus message format employs the H.323

2   protocol.

1   7.   The method of claim 1 wherein said maintaining said logical model further comprises

2   dynamically adding a given device component to said logical model.

1   8.   The method of claim 1 wherein said maintaining further comprises dynamically removing

2   a given device component from said logical model.

1 9. The method of claim 1 wherein a server of said data network service is physically
2 associated with at least one of said selection of said at least one device component.

1 10. The method of claim 1 wherein said representing further comprises:

2 encapsulating a message destined for a server of said data network service to result in
3 an encapsulated message; and

4 sending said encapsulated message to at least one of said selection of said at least one
5 device component for forwarding to said server of said data network service.

1 11. The method of claim 1 wherein said data network service is a first data network service
2 and wherein said providing comprises:

3 executing a first data network service adapter application corresponding to a server of
4 said first data network service; and

5 logically associating said first data network service adapter application with said
6 aggregate logical device.

1 12. The method of claim 11 further comprising:

2 providing access to a second data network service by representing said selection of
3 said at least one device component to said second data network service as said
4 aggregate logical device; and

5 where said providing includes executing a second data network service adapter
6 application corresponding to said server of said second data network service and
7 logically associating said second data network service adapter application with said
8 aggregate logical device.

1 13. The method of claim 12 further comprising routing, as necessary, said communicating
2 with said at least one device component to an appropriate one of either said first data network
3 service adapter application or said second data network service adapter application.

1 14. The method of claim 12 wherein said providing comprises:

2   executing a compound data network service adapter application comprising a logical

3   association of:

4   said first data network service adapter application corresponding to said server

5   of said first data network service; and

6   a second data network service adapter application corresponding to said server

7   of said second data network service; and

8   logically associating said compound data network service adapter application with

9   said aggregate logical device.

1   15. The method of claim 14 wherein said server of said first data network service is

2   functionally associated with said server of said second data network service.

1   16. The method of claim 11 wherein said representing further comprises:

2   receiving an encapsulated message, containing a message from a server of said data

3   network service, from at least one of said selection of said at least one device

4   component; and

5   de-encapsulating said encapsulated message for forwarding to said first data network

6   service adapter application.

1   17. The method of claim 12 further comprising enforcing visibility rules for mediating said

2   communication with said at least one device component as said communication relates to said

3   first data network service adapter application and said second data network service adapter

4   application.

1   18. The method of claim 1 wherein said at least one device component is a plurality of device

2   components.

1   19. The method of claim 18 wherein at least one of said plurality of device components is

2   connected to a data network.

1   20. The method of claim 18 further comprising:
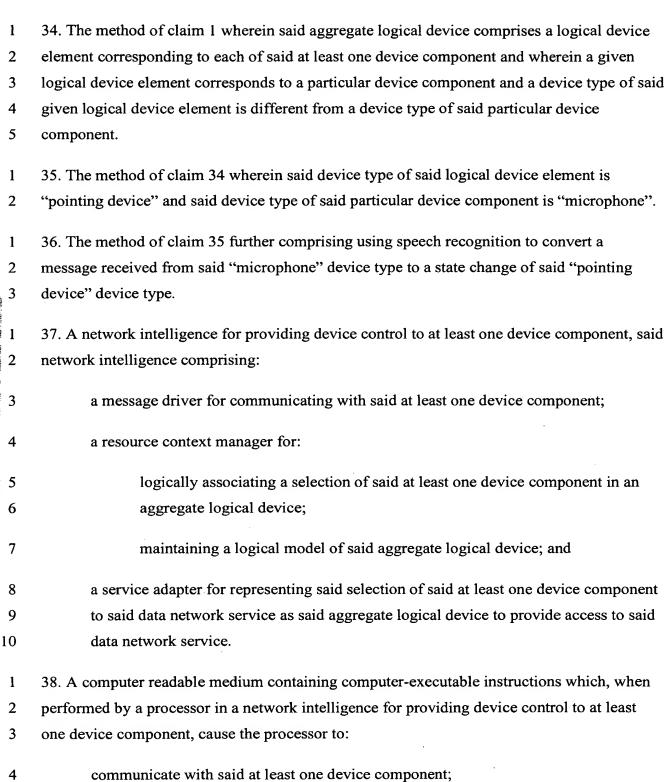
2   logically associating at least one device component of said plurality of device

3   components in a second aggregate logical device; and

4   maintaining a second logical model of said second aggregate logical device.

1   21. The method of claim 20 further comprising providing access to said data network service

2   by representing said at least one device component of said plurality of device components to

3   said data network service as said second aggregate logical device.

1   22. The method of claim 20 further comprising providing access to a second data network

2   service by representing said at least one device component of said plurality of device

3   components to said second data network service as said second aggregate logical device.

1   23. The method of claim 18 wherein a given device component of said selection of said

2   plurality of device components is a primary network intelligence for providing device control

3   to further ones of said plurality of device components.

1   24. The method of claim 23 wherein communication with said primary network intelligence

2   uses a stimulus message format.

1   25. The method of claim 24 wherein said stimulus message format employs the Megaco

2   Protocol.

1   26. The method of claim 23 wherein, upon loss of communication with said primary network

2   intelligence, said method further comprises:

3   communicating with said further ones of said plurality of device components;

4   logically associating said further ones of said plurality of device components with one

5   another as a second aggregate logical device;

6   maintaining a second logical model of said second aggregate logical device; and

7   providing access to said data network service by representing said further ones of said

8   plurality of device components to said data network service as said second aggregate

9   logical device.

1   27. The method of claim 1 wherein said providing comprises:

2   converting an indication of a change in a state of said logical model of said aggregate

3   logical device into a request of said data network service; and

4   sending said request to said data network service.

1   28. The method of claim 27 wherein said providing comprises:

2   receiving a response to said request of said data network service;

3   generating an interpretation of said response; and

4   providing instructions, based on said interpretation, to change said state of said logical

5   model of said aggregate logical device.

1   29. The method of claim 28 wherein said response comprises a media flow and, responsive to

2   said interpretation of said response, said communicating further comprises sending said

3   media flow to a given device component of said selection of said at least one device

4   component.

1   30. The method of claim 29 wherein said generating said interpretation further comprises,

2   before said sending, converting said media flow from a format in which said media flow was

3   received to a format understood by said given device component of said selection of said at

4   least one device component.

1   31. The method of claim 28 wherein said response comprises a data file and, responsive to

2   said interpretation of said response, said communicating further comprises sending said data

3   file to a given device component of said selection of said at least one device component.

1   32. The method of claim 31 wherein said generating said interpretation further comprises,

2   before said sending, converting said data from a format in which said data file was received

3   to a format understood by said given device component of said selection of said at least one

4   device component.

1   33. The method of claim 27 wherein sending said request to said data network service further

2   comprises instructing said data network service to direct a response to a given device

3   component of said selection of said at least one device component.

1   34. The method of claim 1 wherein said aggregate logical device comprises a logical device

2   element corresponding to each of said at least one device component and wherein a given

3   logical device element corresponds to a particular device component and a device type of said

4   given logical device element is different from a device type of said particular device

5   component.

1   35. The method of claim 34 wherein said device type of said logical device element is

2   "pointing device" and said device type of said particular device component is "microphone".

1   36. The method of claim 35 further comprising using speech recognition to convert a

2   message received from said "microphone" device type to a state change of said "pointing

3   device" device type.

1   37. A network intelligence for providing device control to at least one device component, said

2   network intelligence comprising:

3   a message driver for communicating with said at least one device component;

4   a resource context manager for:

5   logically associating a selection of said at least one device component in an

6   aggregate logical device;

7   maintaining a logical model of said aggregate logical device; and

8   a service adapter for representing said selection of said at least one device component

9   to said data network service as said aggregate logical device to provide access to said

10   data network service.

1   38. A computer readable medium containing computer-executable instructions which, when

2   performed by a processor in a network intelligence for providing device control to at least

3   one device component, cause the processor to:

4   communicate with said at least one device component;

5   logically associate a selection of said at least one device component in an aggregate

6   logical device;

7   maintain a logical model of said aggregate logical device;

8   represent said selection of said at least one device component to said data network
9   service as said aggregate logical device to provide access to said data network service.

1   39. A method of sending a message from a device component to a server of data network
2   services comprising:

3   receiving an encapsulated message at said device component;

4   de-encapsulating said encapsulated message to result in a message destined for said
5   server; and

6   sending said message to said server.

1   40. At a device component, a method of receiving a message from a server of data network
2   services comprising:

3   receiving said message;

4   encapsulating said message to result in an encapsulated message; and

5   sending said encapsulated message to an interpreter of said message.

1   41. A communication system, comprising:

2   a plurality of devices connected to a data network; and

3   a network intelligence connected to said data network for providing device control to
4   said plurality of devices and, where said data network is also connected to a data
5   network service, for providing access to said data network service by representing
6   selected ones of said plurality of devices to said data network service as an aggregate
7   logical device.

1   42. The communication system of claim 41 wherein said selected ones of said plurality of
2   devices form a user interface and said selected ones of said plurality of devices are
3   geographically distributed.

1   43. The communication system of claim 41 wherein said data network service is a functional

2   component associated with at least one device of said selected ones of said plurality of

3   devices.

1   44. A method of providing device control to at least one device component, said device

2   control enabling interaction of a stand-alone service with said at least one device component,

3   said method comprising:

4   communicating with said at least one device component;

5   logically associating a selection of said at least one device component in an aggregate

6   logical device;

7   maintaining a logical model of said aggregate logical device; and

8   providing access to said stand-alone service by representing said selection of said at

9   least one device component to said stand-alone service as said aggregate logical

10   device.